July 12, 1938. B. NIER 2,123,794

BURNER FOR HURRICANE LANTERNS

Filed Dec. 8, 1936

Fig. 1

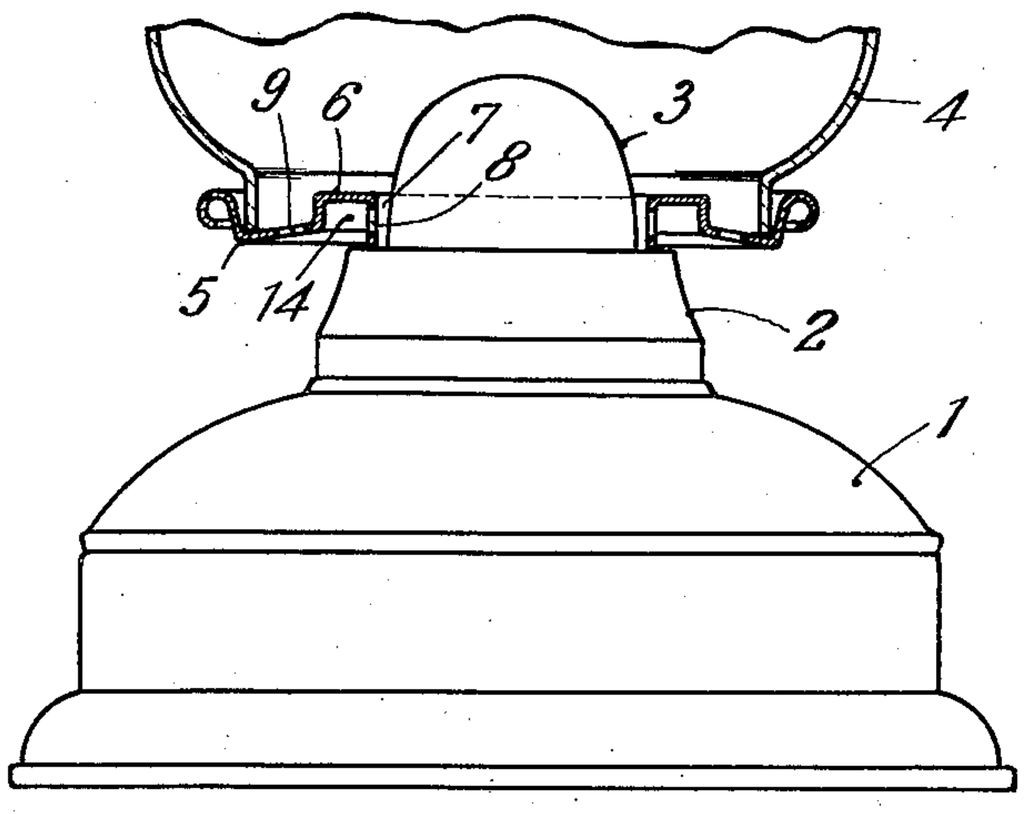
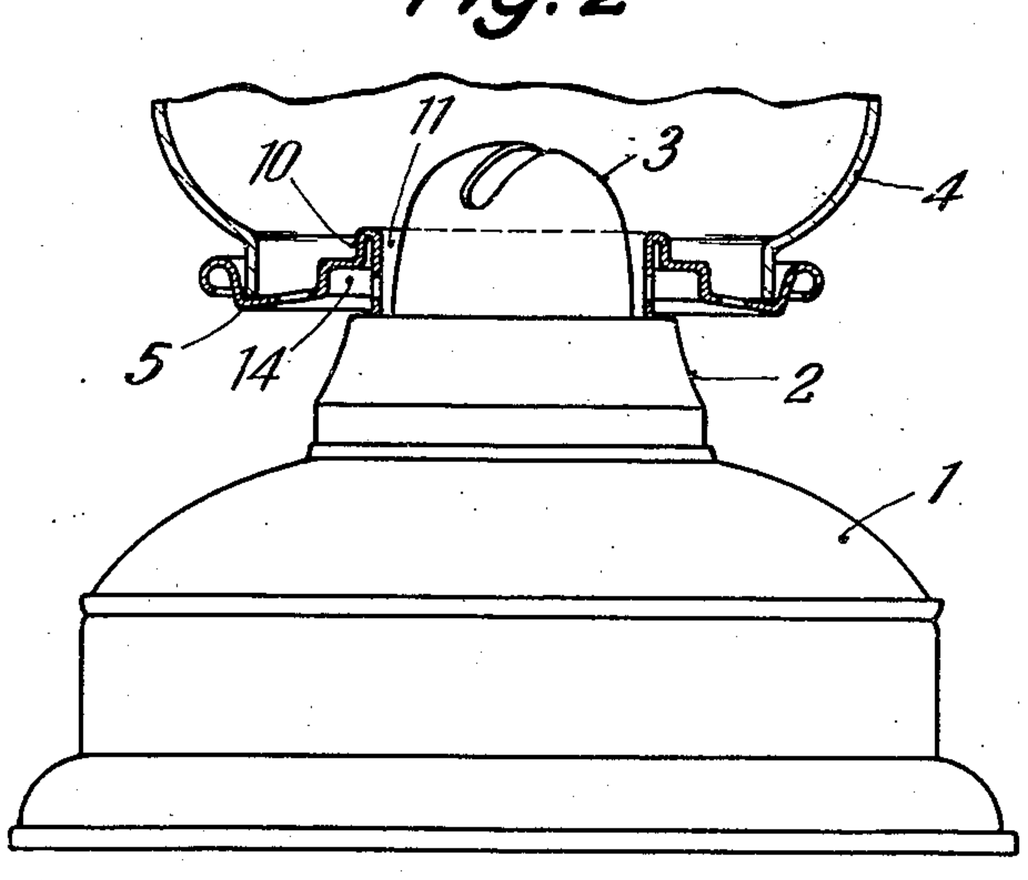


Fig. 2



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BURNER FOR HURRICANE LANTERNS

Bruno Nier, Beierfeld, Germany

Application December 8, 1936, Serial No. 114,872
In Germany November 14, 1935

1 Claim. (Cl. 240—27)

This invention relates to improvements in the burners for hurricane lanterns and has for its object the provision of means whereby the performance of such burners under working conditions is improved.

The decisive factor for the perfect burning of hurricane lanterns is that air is fed to the burner in sufficient quantity and as regularly as possible and that this condition is maintained during violent gusts of wind and so forth.

It has been found advantageous to pre-heat the supply of fresh air which is to be led to the lantern, for example by the employment of a ring-shaped reflector in the form of an inverted pan, which at the same time serves as an air chamber and pre-heater for the combustion air and for the protection of the flame.

It has been proposed to provide perforations in the side walls of the air chamber which is formed by the reflector, and also to provide movable slides which control the admission of the air to the air chamber for regulating the primary combustion air.

Hurricane lanterns are known in which air spaces opening downwardly are formed by the pan-shaped development of a part of the sieve plate.

However all these known devices do not assure that the object of making hurricane lanterns storm-proof is attained, i. e., to guarantee their perfect burning under all outside conditions which may arise in practice; nevertheless this is the decisive point in hurricane lanterns and the subject matter of this application resides in the production of a hurricane lantern which enables this end to be achieved in a reliable manner.

In accordance with the invention the above mentioned is applied to known burners for hurricane lanterns in which an air space opening downwardly exists through the pan-shaped construction of a part of the sieve plate.

Burners of this type, according to the present invention, are improved materially by the fact that a second air space is formed between the inner wall surrounding the burner hood at a distance that limits the air space, and the burner hood.

The two spaces are connected by perforations in the wall which surrounds the burner hood and further perforations opening downwardly are provided in the outside part of the sieve plate in front of the outside wall of the air space which has thereby been formed, thus making possible a movement of the air upwardly.

By this construction of the burner it results that the air chamber which is required for the pre-heating and feeding of the primary combustion air, is formed by the lantern sieve itself which furthermore is so designed that two separate currents of air are formed, by which the necessary air for combustion is conducted to the flame under all circumstances evenly and without shocks.

In the drawing:—

Figure 1 is a vertical elevation of a hurricane lantern burner showing in section one form of the invention applied thereto and

Figure 2 is a vertical elevation of a hurricane lantern burner showing in section a modified form of the invention applied thereto.

As shown 1 is the oil container upon which the burner 2 is mounted in the usual manner, 3 the burner hood, 4 the lamp glass and 5 the sieve plate which carries the lamp glass.

According to the invention, this sieve plate 5 is developed into an air chamber 6, having a perforation 8 which connects the chamber 6 with a space or gap 7 and a perforation 9 which connects to the cylindrical space.

In the form of construction according to Figure 2 the wall 10 of the burner chamber which is formed in the sieve, is drawn upwardly with the result that the content of the air chamber, as well as the space 11 existing between the air chamber and the burner hood, is increased in size.

By the development of the sieve plate, in effect two air chambers are created, namely the air chamber 14 below the sieve surface and the air chamber 7 or 7 and 11 between the side wall of the sieve plate which has been bent downwards, and the burner hood.

These two chambers together have sufficient cubic content to supply the burner with sufficient pre-heated combustion air.

As distinguished from known burner chambers those formed according to this invention present the advantage that the air arrives at the flame absolutely without shock and the disadvantage, particularly with small hurricane lanterns, hitherto experienced, that the air has been too strongly pre-heated in the burner chamber and thereby affects the luminosity of the lantern, is eliminated.

Therefore the lantern with this novel regulation of air to the burner is absolutely storm-proof and thus superior to the known forms of construction and an important advance from an economic aspect is that the good qualities are achieved solely by the appropriate form of con-

struction of the sieve plate, and that any special additional contrivances are not necessary.

I claim:—

In a hurricane lantern, a burner having a burner hood, a sieve plate provided with an inner wall portion arranged in a spaced relation with respect to the burner hood so as to provide an air chamber between the inner wall of the sieve plate and the burner hood, said sieve plate having a solid portion extending away from the inner wall and a solid skirt portion extending in the direction of the inner wall so as to provide another air chamber under the sieve plate between the inner wall and the solid skirt portion, said sieve plate having a portion extending outwardly from the skirt and having holes therein, and said inner wall having openings therein whereby the air in said second mentioned air chamber may enter the first mentioned air chamber through said openings and air may pass from the underside of the outer portion of the sieve plate through said holes.

BRUNO NIER.